1. Describe the practice proposed for recognition and list its objectives. Detail how the practice is innovative, how it promotes high student achievement and how it can be replicated.

Our school has recently held its fifth annual Metric Olympics. The Metric Olympics is the culminating activity after students receive two weeks of instruction on metrics in their math and science classrooms. During math classes students are instructed on the basic metric units using the phrase "King Henry Dropped Over Dead Converting Metrics." (K stands for kilo; H - hecto; D - deka; O - meter, liter, and gram; D- deci; C - centi; and M - milli) The worldwide use of metrics is discussed along with the ease of conversion by moving the decimal point.

Students are taught to use their arms and hands to estimate length. Outstretched arms representing 'meet her' is used to estimate a meter. Decimeter and centimeter are represented by the width of a person's palm and pinkie finger, respectively. A standard of comparison for volume is the liter bottle of soda and a medicine dropper. The paper clip and a math book are used as a standard of comparison for the gram and kilogram, respectively.

During science classes precise measurements are made with meter tapes, graduated cylinders, and balances.

For the actual Metric Olympics competition all of the seventh graders are divided into teams and compete in 10 events involving estimation of length, mass, and volume. Several events are patterned after Olympic events and others involve performing activities requiring measurement. In the discus event, for example, each student on a team tosses a plastic plate (their discus). All the plates are then removed except the one which was thrown the farthest. The students work cooperatively and estimate in centimeters the distance. When this estimate is recorded, the team measures the actual distance using meter tapes. The actual distance is then recorded. The off-score is found by subtracting the actual distance and the estimated distance. The off-scores of all the 10 events are totaled. The team with the lowest final off-score is the gold medal winner. Ribbons are given for first, second, and third place. The other events include the javelin, standing broad jump, circumference of five tables decorated and displayed as the Olympic sign, volume of a box, mass of a cupcake (at the conclusion of that event the students eat cupcakes), mass of a handful of rubber bands, mass of a handful of marbles, and the capacity of a sponge and capacity of several cups (at the conclusion of that event the students enjoy juice).

At the end of the competition each team writes in paragraph form their impressions of the Metric Olympics. The feedback has always been positive. They are having fun and learning at the same time. "We wish we could do this everyday."

Whether on a small scale in a teacher's classroom or on a large scale in a library or cafeteria, the Metric Olympics can be easily replicated. We chose to involve the entire 7th grade: enriched math students, standard math students, and resource math students. We set up the 10 stations in the library and had parent volunteers act as station commanders who were responsible for accurate recording by the students. They learned a lot about metrics too. Half of the students participated in the morning and the other half participated in the afternoon.

To summarize, the Metric Olympics' objectives are:

1. The students will familiarize themselves with the metric system and choose the correct metric unit when measuring.
2. The students will be able to convert one metric unit into another.
3. The students will be able to differentiate between the appropriateness of estimation and exact measurement.
4. The students will demonstrate the ability to use laboratory instruments properly.
5. The students will be able to work cooperatively in groups and come to a consensus.

2. Describe the educational needs of students that the practice addresses and how they were identified. List the Core Curriculum Content and Cross-Content Workplace Readiness Standards addressed by the practice and describe how the practice addresses the standards.

Five years ago, while doing curriculum mapping, it was noticed that the metric system is taught in both math and science classes. It was decided that the metric system would be taught in a multidisciplinary manner in math and science.

All classes are heterogeneously grouped. The metric system is taught through a variety of strategies to meet the different needs of all students. These include lecture, discussions, small group work, and hands-on work. Reinforcement of skills is provided through handouts, practice in class, quizzes, and group activities.

The following Cross-Content Workplace Readiness Standards were addressed:

Standard 3: All students will use critical thinking, decision making, and problem-solving skills. Indicators 1,7,12,13,14.
Standard 4: All students will demonstrate self-management skills. Indicators 2,3,7,9.
Standard 5: All students will apply safety principles. Indicators 4,7.

The following Core Curriculum Standards were addressed:

Standard 4.1: All students will develop the ability to pose and solve mathematical problems in mathematics and other disciplines and everyday experiences.
Indicators 5, 6, 13.
Standard 4.3: All students will connect mathematics to other learning by understanding the interrelationships of mathematical ideas and, the roles that mathematics and mathematical modeling play in other disciplines and in life.
Indicators 6,7,10,11.
Standard 4.9: All students will develop an understanding of and will use measurement to describe and analyze phenomena. Indicators 7,9,10,11,13,14.
Standard 4.10: All students will use a variety of estimation strategies and recognize situations in which estimation is appropriate. Indicators 7,8,10.
Standard 5.5: All students will develop problem-solving, decision-making, and inquiry skills reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results. Indicator 6.
Standard 5.5: All students will integrate mathematics as a tool for problem-solving in science, and as a means of expressing and/or modeling scientific theories.
Indicators 5,6,8,9.

All standards were met through a variety of ways. In math class, students were shown several different ways in which to estimate length, mass, and volume using metric units. They also learned how to convert one metric unit into another. In science, students used the metric system in a mock laboratory situation which required them to use the scientific method. They also had to demonstrate an ability to use laboratory instruments properly and safely through a hands-on activity.

The Metric Olympics required students to work cooperatively with other students they normally don't work with. Since the events were timed, time management was also addressed. The Metric Olympics showed students the appropriateness of estimation and exact measurement. Students also saw a definite connection between math and science in school and life.

3. Document the assessment measures used to determine the extent to which the objectives of the practice have been met.

The students are assessed through a variety of methods. In science class the students are given a pre-test to determine their skill level in reading laboratory instruments. These include balances, graduated cylinders, and metric rulers.

Students are graded on a mock laboratory which requires them to use the scientific method and metric measurements. They are also graded on a group activity. This requires them to find the mass, length, and volume of various everyday objects. They then convert from one metric unit to another.

Assessment in science class is also ongoing throughout the school year. Students gain an understanding of the value of the scientific method in each laboratory experiment they complete. They are also expected to use precise metric measurements and display proper laboratory safety.

In math class there are graded homework assignments involving metric conversion, multiple choice estimation, and problem solving involving metric measurement. Several quizzes are given throughout the unit to determine student progress. A unit test is the final assessment.

The Metric Olympics activity is also used to assess student progress. Even though the event is not graded, teachers observe each station and the students' responses and interactions. The students are not aware that this assessment is occurring.